

75. HEMIRAMPHUS ECTUNTIO, II. Buch.

Gungituri (Ooriah).D. $\frac{2}{12}$. P. 11. V. 6. A. $\frac{2}{13}$. C. 15. L. l. 52. L. tr. 7/4.

Length of head $\frac{1}{3}$, of pectoral $\frac{1}{10}$, of base of dorsal $\frac{1}{3}$, of base of anal $\frac{1}{10}$, of caudal $\frac{1}{4}$ of the total length. Height of head $\frac{1}{12}$, of body $\frac{1}{10}$, of dorsal $\frac{1}{15}$, of ventral $\frac{1}{20}$, of anal $\frac{1}{12}$ of the total length.

Eyes. From $1\frac{1}{2}$ to 2 diameters from the posterior extremity of the opercle, and 1 diameter apart.

Præorbital one-third longer than high. Upper jaw nearly triangular, its base slightly longer than its length; it is keeled along its central line.

Teeth in both jaws, also on palatines.

Fins. Dorsal commences somewhat in advance of the anal; the ventral nearly midway between the posterior margin of the orbit and the base of the caudal fin, which last is lobed, the lower being the longest.

Scales scarcely deciduous, covering the body, and existing between the orbits and over the præorbital; none on the bases of the fins.

Lateral line runs the lower fourth of the abdomen.

Colours. Greenish above, silvery below. A burnished silvery line extends from above the orbit to the centre of the caudal fin; it is widest over the anal, where it has a dark edge along its upper margin. Dorsal and caudal stained at their edges.

This fish is very numerous in the rivers of Orissa; it has, however, been placed amongst the "doubtful species" in the Catalogue of the British Museum.

76. HAPLOCHEILUS PANCHAX, II. Buch.

Kanakuri (Ooriah).*Hab.* Tanks and rivers throughout Orissa.

77. HAPLOCHEILUS MELASTIGMA, M'Clelland.

Panchax cyanophthalmus, Blyth.D. $\frac{3}{5}$. P. 11. V. 6. A. $\frac{2}{20}$. C. 13. L. l. 29. L. tr. 13.*Hab.* This species is not uncommon in tanks in Orissa.

4. Descriptions of some new Suctorial Annelides in the Collection of the British Museum. By W. BAIRD, M.D., F.R.S., &c.

Genus BRANCHELLION, Savigny.

1. BRANCHELLION INTYBIFOLIUM, Baird.

Body elongate, very concave ventrally, convex dorsally, consisting of about 48 segments, which are transversely striated on the back. Neck distinct from the body, consisting of 10 or 12 short, narrow segments. Oral sucker small. Ventral sucker large, circularly

striated round the external margin, and studded with granules internally, at the bottom of the cup. Both suckers are plaited on the margins. Each segment from the commencement of the body to within four of the posterior sucker is furnished on each side with a large foliaceous appendage, which is sessile, simple on the margin, but puckered and sinuated like the leaf of the endive.

The only specimen the British Museum possesses is of a uniform very dark colour, the edges of the posterior sucker excepted, which are much lighter.

Length about $1\frac{1}{2}$ inch, breadth (of body) 4 or 5 lines*.

The habitat is unknown. The specimen was added to the Museum collection by the late Mr. H. Cuming.

2. BRANCHELLION LINEARE, Baird.

Body linear-elongate, flattened, distinctly annulated. Segments of body about 32, those of neck not so distinct as those on the body, and about 10 or 12 in number. The neck is separated from the body by a well-marked constriction, but is nearly equal in diameter to the body. The oral disk is circular and smooth, or only finely striated interiorly. The ventral is considerably larger, circular, and densely granulated within the cup. The disks are slightly excentral. Branchiform lateral appendages simple, not puckered on the margin.

Length about 6 lines, breadth about 1 line.

This species was taken from a species of *Mustelus* in King George's Sound, N. Australia, by Mr. Rayner, Surgeon to H.M.S. 'Herald.'

3. BRANCHELLION PUNCTATUM, Baird.

Body narrow, elongate, nearly flat on both ventral and dorsal surfaces, distinctly annulated. Segments somewhat striated on their backs, those of the body about 32 in number. Neck indistinctly annulated. Ventral surface light-coloured; dorsal dark, with numerous small, round, yellow spots scattered over the surface. The oral sucker is much smaller than the ventral, the margin thickened, and the cup is minutely granulated interiorly. Ventral sucker large, quite terminal, shallow, and with larger granulations on its interior surface. Branchiform appendages larger on the posterior portion of the body, simple, not puckered on the margin.

Length of largest specimen nearly $1\frac{1}{2}$ inch, breadth about 2 lines.

The only specimen we possess in the British Museum collection was taken from a species of *Myliobates* caught in King George's Sound, N. Australia, by Mr. Rayner, Surgeon of H.M.S. 'Herald.'

Genus EUBRANCHELLA, Baird.

Margins of body furnished with linear, pinnated, instead of broad, foliaceous, appendages, much more resembling true branchiæ than those in *Branchellion*. Neck separated from the body. Head small, leech-like.

* The species described in this paper are all preserved in spirits; and being more or less corrugated by the spirit, the dimensions are only approximative.

EUBRANCHELLA BRANCHIATA.

Hirudo branchiata, Menzies, Linn. Trans. i. 188, tab. xviii. fig. 3.

Polydora testudinum, Oken.

Branchellion pinnatum, Savigny, Grube.

Branchiobdella menziesi, De Blainville, Diesing.

This, as far as I am aware, is the only species of this genus known. Savigny was the first to recognize it as belonging to a different genus from *Branchellion*. Diesing and Moquin-Tandon appear to consider the species doubtful; but Mr. Rayner, Surgeon of H.M.S. 'Herald,' succeeded in taking it from a turtle in Sharks' Bay, Australia, eleven or twelve years ago. The animal is only half an inch long.

Genus PONTOBDELLA, Leach.

1. PONTOBDELLA AFRA, Baird.

Body cylindrical, ventricose in the middle, attenuated at each extremity, slightly posteriorly, but more so anteriorly. Segments encircled with a series of rather large warts, each wart being circular in form, rather flattened, and covered with a series of smaller warts or minute tubercles on its centre. The neck consists of 12 segments, every third one being the largest and warty, the intervening ones quite smooth, and is separated from the body by five narrow smooth segments. The acetabulum or ventral sucker is much larger than the head, which is very small in comparison and armed on its margin with six rather small nodules or conical tubercles, three on each side.

The postoccipital segment is armed with a row of similar small conical tubercles, differing from the warts on the body. The colour of this Leech is a dark olive, or of a blackish hue.

The worm is about $4\frac{1}{2}$ inches long, and the largest portion of the body is about $2\frac{1}{4}$ inches in circumference.

The only specimen the Museum possesses is ticketed "San Vicente," and was presented to the collection by the Rev. R. T. Lowe, late of Madeira.

2. PONTOBDELLA PLANODISCUS, Baird.

Body much flattened, attenuated at the anterior extremity. Segments surrounded with a row of conical raised warts, each wart having two or three small nodules on the upper surface. The neck consists of 12 segments, all of which are warty, the warts, however, being much smaller than those of the body, from which it is separated by five warty rings. The acetabulum is considerably larger than the head, is quite plane, not hollowed at all, and rayed externally with numerous rather broad bands of brown. The head is small and puckered round the edges, and has six small conical papillæ on the margin, three on each side, not in a line with each other but set in a triangular manner, two on the same plane, the third, forming the apex of the triangle, at some little distance from the margin. The body is marked on the anterior portion and the neck

with rather narrow circular bands of dark brown on a yellowish ground.

We possess only one specimen of this species. It was collected in Possession Bay, Patagonia, by Dr. Cunningham, naturalist to the late Surveying Expedition to the Straits of Magellan.

Length of body about 2 inches, breadth (at broadest part) about 4 lines.

3. PONTOBDELLA VARIEGATA, Baird.

Body cylindrical, somewhat fusiform, much attenuated at the anterior extremity. Posterior extremity the larger in circumference, gradually tapering towards the head. Segments covered with smooth, conical, rounded warts, of nearly uniform size. The neck is composed of 10 or 11 segments, and is separated from the body by five narrower ones, all the segments being slightly warty. The acetabulum is considerably larger than the head, which is smooth on its margin, having no nodules round the rim. The body is marked with spots of a deeper brown colour on a yellowish ground, and the acetabulum is rayed with the same hue.

We possess two specimens,—one in very good preservation from the Straits of Magellan, presented by the Lords of the Admiralty; the other from Possession Bay, Patagonia, collected by Dr. Cunningham along with the preceding species.

One specimen (somewhat contracted) measures about $2\frac{1}{4}$ inches in length, the other (more relaxed) is nearly 3 inches long; circumference (at the broadest part) $1\frac{1}{4}$ inch.

4. PONTOBDELLA RAYNERI, Baird.

Body cylindrical, much attenuated at the anterior extremity. Segments surrounded with raised conical warts, each wart having several small warts on its summit. The neck is elongated, and surrounded, as is the body, with warts. It consists of 12 segments, and is almost continuous with the body, being slightly separated from it by five warty rings. The acetabulum is larger than the head, faintly rayed with brown, and somewhat puckered round the margin. The head is small, circular, and the margin has six small conical papillæ. On the side of the head are two well-marked brown spots, somewhat triangular in shape. The warts on the body are so arranged as to present one row of large ones, and two rows of smaller ones succeeding it; that is to say, every third row of warts is the largest.

When relaxed, the length is about 1 inch; when corrugated by the spirit it diminishes one-fourth.

Hab. Found on a species of *Rhinobatis* in Sharks' Bay, Australia. Collected by Mr. Rayner, Surgeon H.M.S. 'Herald.'

Genus AULASTOMA, Moquin-Tandon.

1. AULASTOMA PLANUM, Baird.

Body flattened, slightly convex dorsally, very flat ventrally, at-

tenuated anteriorly, broadest about the centre. Colour of a light olive, uniform underneath, but marked with irregular black spots on the back. Rings rather narrow, with an indistinct keel along both dorsal and ventral surfaces of each. Oral sucker rather small, ventral large. Anus large. Teeth on the jaw nearly black.

Length of body (in spirits) 3 inches, breadth (at broadest part) 9 lines.

Hab. Cuba? From the collection of the late Mr. John Christy, F.R.S. &c.

2. AULASTOMA EXIMIO-STRIATUM, Baird.

Body flattened, especially on the ventral surface, slightly attenuated at each extremity, but more so anteriorly; broadest about the centre. Back olive-coloured, speckled with black spots or marks scattered profusely over the surface; ventral surface of a uniform colour, lighter than the back. Rings very distinct, particularly well-marked at the sides, which appear as if crenate; on the back they are marked with very numerous, minute fine striæ, which are best seen when the specimen is taken out of spirits. Oral sucker small; ventral moderate and rather deep, granose on outer edge. Anus large.

Length about 2 inches, breadth about 8 lines.

Hab. —? Old collection.

Genus HIRUDO, Linnæus.

1. HIRUDO INCONCINNA, Baird.

Body much depressed, of a uniform dark olive-colour, somewhat lighter underneath, much attenuated at anterior extremity. Body broad posteriorly, coarsely annulated; surface of rings roughly wrinkled. Oral sucker small; ventral large, shallow, bordered with a smooth margin, distinctly radiately plaited on interior surface, and covered with flat granulations externally, or as it were tessellated.

Breadth of anterior portion immediately below the oral sucker 3 lines, breadth at broadest part of body 9 lines; diameter of ventral sucker 5 lines; length of body 4 inches.

Hab. Ceylon (*Sir A. Smith, M.D.*).

Several species of Leeches are found in Ceylon, and are particularly mentioned by the late Sir J. E. Tennent in his history of that island. This may be the Leech mentioned by him in vol. i. p. 305 (footnote), which was observed by Mr. Thwaites at Kolona Koole, but which he was not able to examine particularly. He describes it "as flatter and of a darker colour" than the paddy-field Leech (*Homopsis sanguisorba*) of Ceylon.

2. HIRUDO LOWEI, Baird.

Body depressed, concave on ventral surface, slightly convex dorsally, of a uniform olive-colour, rather lighter underneath. No bands or marks on the surface to be seen. Attenuated anteriorly. Body distinctly annulated; rings very irregular, contracted at about every fourth or fifth, the fourth or fifth being smaller than the rest,

and as it were sunk beneath the others. Rings beset with spinulous tubercles, about 30 or 35 in number. In many the spines are only on the lower edge of the ring and point downwards. Oral sucker small; ventral deep and large, much plaited both internally and on the external margin, and covered externally with spinulous tubercles.

Length nearly 3 inches, breadth (at broadest part) about 9 lines.

Hab. Borneo. From the collection of Mr. Lowe, H.B.M. Consul at Sarawak.

3. HIRUDO BELCHERI, Baird.

Body depressed, slightly convex on the back, of a yellowish grey colour, indistinctly banded near the dorsal margin with dark olive; edges as it were serrated, attenuated anteriorly. Body consisting of about 95 very narrow rings, each ring beset all round with numerous pointed raised dots or small tubercles, about 40 on each ring. Oral sucker of considerable size; ventral moderate, and radiately plaited internally and on external margin. The rings of this species are narrower and much more distinctly tubercular than those of *Hirudo granulosa* from India.

Length of body $2\frac{1}{4}$ inches, breadth (at broadest part) 6 lines.

Hab. Borneo (*Sir E. Belcher, R.N.*).

4. HIRUDO MACULATA, Baird.

Body depressed, flat beneath, slightly convex on the back; attenuated anteriorly. Back of a deep grey colour, marked in the centre with an interrupted black line, and a row of spots of the same colour near the edges, the spots being distributed alternately—first on one ring with an intermediate ring without a spot, then, secondly, a spot and two rings without a spot, and thus alternately throughout its whole length*. Abdominal surface lighter-coloured, with a broad line of a dark colour on each side. Rings very narrow, beset with numerous small tubercles, about 36 in number. Oral sucker of considerable size; ventral circular, with a simple border, strongly plaited internally and granulous externally.

Length of body about $2\frac{1}{2}$ inches; breadth (at broadest part) about $7\frac{1}{2}$ lines.

Hab. Siam.

5. HIRUDO ASSIMILIS, Baird.

Body rather narrow, attenuated anteriorly, of a light yellowish colour above and beneath. Back convex, marked with an indistinct row of small spots in the centre, and an interrupted row of larger black spots at the margins, the spotted alternating with the unspotted rings, in the same way as in *H. maculata*, described above. Ventral surface of a uniform colour, without any markings. Rings larger

* In general I have observed that in European species the marginal row of spots is continuous, a spot occurring on each ring, whilst in those from the Eastern countries the spots are alternate, as I have described them in the species mentioned here. This holds good with the *Hirudo granulosa* from India, the present, and succeeding species, all from the East.

than in *maculata*, and tubercular. Oral sucker moderate in size; ventral circular, radiately plaited internally and granulous externally.

Length of body about 3 inches, greatest breadth about 4 lines.

Hab. Hong-Kong, China (*Sir A. Smith, M.D.*).

A species has been described by Blainville from a drawing made by a native artist in the Chinese 'Encyclopædia,' and named by him *Hirudo sinica*. This Leech is said to be employed medicinally in China. It is small and entirely black, which would show it to be a different species from that found in Hong-Kong.

6. *HIRUDO SEMICARINATA*, Baird.

Body rounded, of a uniform dark olive-colour above and beneath, slightly narrower at anterior extremity. Rings narrow, with a few tubercles on the surface. Oral sucker round, with scarcely any lip, but plaited round its margin; ventral sucker moderate, indistinctly plaited on internal surface. Anus small. The anterior half of the body is marked on the dorsal surface with a sort of raised keel.

Length of body 16 lines, breadth of body about 3 lines (largest specimen).

Hab. Vancouver Island (*J. K. Lord, Esq.*); Great Bear Lake, N. America (*Sir J. Richardson, M.D.*).

7. *HIRUDO LÆVIS*, Baird.

Body depressed, flat ventrally, slightly convex dorsally, attenuated anteriorly. Of a uniform dull yellowish colour above and beneath. No bands or marks to be seen, unless an indistinct continuous band on each side dorsally. Rings quite smooth; the lower margin of each raised somewhat like a keel; and on the edges at the sides the rings are as if they were divided into two, but only on the edges. Oral sucker small; ventral rather small, radiately plaited.

Length $4\frac{1}{2}$ inches, greatest breadth about 9 lines.

Hab. —? Old collection*.

Genus *HETEROBDELLA*, Baird.

Body composed of 160 rings. Male organ situated between the twenty-ninth and thirtieth ring; female between the forty-eighth and forty-ninth. Eyes five pairs—three situated on first ring, one on second, and one on fifth. Anus rather small, round, and distinct, situated between the fourth and fifth last ring, in the centre, a little above the ventral sucker, which is obliquely terminal, and so placed as to have a ventral aspect.

* A cargo of Leeches was lately imported into London from Australia; but, the demand for Leeches being now much restricted owing to the disuse of blood-letting by medical men in this country, it appears that they were almost all thrown into the Thames. Three or four specimens, however, were saved from the mass, and kindly sent alive to the British Museum by Mr. Morson of Southampton Row. This Leech is one which is used in Australia for medicinal purposes; and a dissection of the mouth shows the teeth to be strong and well developed. The species is the *Hirudo quinquestriata* of Schmarda, and described by him in his 'Neue Wirbelthiere,' vol. ii.

HETEROBDELLA MEXICANA, Baird.

Body rounded dorsally, flattened ventrally; narrow, nearly uniform in breadth, but slightly attenuated anteriorly; of a uniform pale brown colour. Rings very narrow, rather rugose. Oral sucker rather small; upper lip prominent, plaited. Ventral sucker round, deep, plaited on outer margin, smooth, obliquely terminal, and with a ventral aspect; in several specimens this sucker was closed, being contracted longitudinally. Anus distinctly visible, of moderate size, between the fourth and fifth last ring, above the ventral sucker.

Length about 20 lines, breadth about 4 lines.

Hab. Mexico. Collected by M. Sallé.

Genus GLOSSIPHONIA, Johnson.

1. GLOSSIPHONIA RUDIS, Baird.

Body of an obovate form, and of a uniform olive-colour; roughly annulated, each ring armed with a series of tubercles along its surface, and having a number of larger, reddish-coloured tubercles scattered irregularly over the surface of the back. Head and body continuous. Dorsum rather convex, ventrally concave. Oral sucker smaller than ventral, which is round, hollow, and smooth internally. Eyes? six in number (as far as could be made out). Sexual orifice about the twenty-third ring.

Length about 1 inch, greatest breadth nearly $\frac{1}{2}$ inch.

Hab. Great Bear Lake, N. America (*Sir J. Richardson, M.D.*).

2. GLOSSIPHONIA TRISULCATA, Baird.

Body obovate; head small, distinct from the body, being separated by a distinct notch. Eyes two, or, if four, placed so close together that they look as only two. Of a uniform dull olive-colour, with three distinct raised sulci or ridges, which converge to a point at the upper part of the body, just below the head, and nearly converging posteriorly also. The ridges are beset, all along their upper margins, with raised tubercles. Ventral surface as if trellised by crossing striæ. Ventral sucker rather small, round. Back somewhat convex, ventral surface concave.

Length about 10 lines, greatest breadth 4 lines.

Hab. —? Old collection.

3. GLOSSIPHONIA CIMICIFORMIS, Baird.

Body rounded oval, flat, somewhat concave ventrally, nearly flat on dorsal surface. Rings very close and indistinct, beset with six longitudinal rows of raised tubercles, the two central rows the largest and most distinct. Colour above of a reddish brown, the tubercles lighter in hue. Borders or margins of body very thick and large, leaving a hollow space in the centre of ventral surface, with a row of black spots on each side running longitudinally for the greatest part of its length. Eyes six; anterior pair very small, second pair large, and third pair smaller than second. Body of a hard crusta-

ceous sort of structure ; and the form altogether presents very much the appearance of a bug. Ventral sucker round and rather deep.

Length about 3 lines, breadth about $2\frac{1}{2}$ lines.

Hab. — ? Old collection.

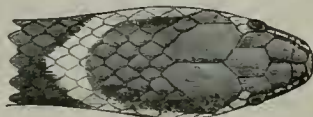
5. Descriptions of new Australian Snakes. By GERARD KREFFT, F.L.S., C.M.Z.S., Curator and Secretary of the Australian Museum at Sydney, N.S.W.

CACOPHIS FORDEI. (Figs. 1 & 2.)

Scales in 15 rows. Abdominal plates — ? Subcaudals — ?
Two anal plates.

Total length 13 inches, head $\frac{1}{2}$, tail $1\frac{3}{4}$.

Figs. 1 & 2.



Cacophis fordei.

Body elongate and rounded ; head rather small, not distinct from trunk, flat, regularly shielded ; vertical moderate, with a very sharp angle behind ; superciliaries much smaller, occipitals slightly larger than the vertical ; rostral rather depressed, with a groove on its lower edge ; one anterior, two posterior oculars ; one large and elongate temporal shield, with two others behind, the upper one being nearly as large as the first temporal ; six upper labials, the third and fourth coming into the orbit ; these shields increase from the first to the last, which is the largest ; the lower labials are also six in number ; the eye is small, with rounded pupil ; scales hexagonal, about as broad as they are long, except the upper rows on the back, which are more elongate. The head is scarcely to be distinguished from the body, and for one-fourth of the whole length there is no increase in size ; the body then gradually enlarges, being much stouter posteriorly, with a short and very distinct tail. In young and half-grown individuals these characters are not so clearly defined ; the tail is nearly of the same size as in the adult, rather stout, but distinct from the body. The general colour is a kind of sepia-brown above, in adults much lighter anteriorly, a white or yellowish collar